



Louisville Metro Air Pollution Control District

Control Device Permit Application Form AP-300N

Venturi Scrubber

Mail application to:
850 Barret Avenue
Louisville, KY 40204
OR

e-mail to:
airpermits@louisvilleky.gov

(502) 574-6000
FAX: (502) 574-5137
www.louisvilleky.gov/apcd

Plant Name:

Plant ID:

Date of construction, modification,
installation, or operation:

Control equipment associated
with this process equipment:

Equipment Description

Manufacturer:

Model:

Inlet air flow: Velocity -

Volumetric -

@ °

Pressure drop -

Water flow rate:

Draft:

☐ Forced

☐ Induced

Collection Efficiency:

PM: %

PM₁₀: %

PM_{2.5}: %

Describe how the collection efficiency was determined:

(If other than Manufacturer's specification, include documentation supporting the claimed efficiency)

List the contaminants in the waste stream that are removed by the cyclone

Contaminant	CAS # (if applicable)	Gas stream concentration

Describe how the contaminant material is collected and the ultimate disposition of this material. Also, detail the handling of the water used in the scrubber.

Instructions for Venturi Scrubber

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A venturi scrubber consists of three sections: a converging section, a throat section, and a diverging section. The inlet gas stream enters the converging section and, as the area decreases, gas velocity increases. Liquid is introduced either at the throat or at the entrance to the converging section. The inlet gas, forced to move at extremely high velocities in the small throat section, shears the liquid from its walls, producing an enormous number of very tiny droplets. Particle and gas removal occur in the throat section as the inlet gas stream mixes with the fog of tiny liquid droplets. The inlet stream then exits through the diverging section, where it is forced to slow down.

General Information

Plant Name Enter the plant name.

Plant ID This is the identification number assigned to the source by the District. If this application is for a new source for which an ID has not been assigned, leave this blank.

Equipment Description

Manufacturer Enter the name of the company that manufactures the Venturi equipment.

Model Enter the model number of the equipment to be installed.

Inlet velocity Enter the nominal inlet velocity (magnitude and units) at the entrance to the settling chamber.

Volumetric flow Enter the flow rate, in actual cubic feet per minute and the nominal temperature at the entrance, circling F for Fahrenheit or C for Celsius degrees.

Pressure drop Enter the drop in pressure between the entrance and exit of the settling chamber, measured in inches of water column.

Water flow rate Enter the rate (magnitude and units) at which water is introduced into the scrubber.

Draft Check whether the airflow through the cyclone is by forced or induced draft.

Collection efficiency Enter the collection efficiency for the particle sizes indicated.

Efficiency determination Indicate how the destruction efficiency was determined. (*e.g.* manufacturer's specification, calculation, stack test, *etc*). Include appropriate documentation to support destruction efficiency claims.

Contaminant list List the materials that are removed from the airstream by the oxidizer. If a CAS registration number exists for the material, list that as well. Finally, list the typical concentration of the contaminant in the exhaust gas stream.